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RESEARCH ARTICLE

Seasonal variation in the occurrence of am fungi determined in the soils of Khedgaon and adjacent regions associated with potato (*Solanum tuberosum* L.)

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SUMMARY

Three sites in and around Pune were selected for occurrence of AM fungi. Soil samples were collected at intervals of 30 days from August 2009 – July 2010. The soil samples were analyzed for spore count per 100 g soil sample and roots for per cent root infection. Besides this the biodiversity was estimated. A total of 4 genera and 22 species were isolated and identified. Spore count was seen to be maximum in the month of July for all the three sites whereas minimum was seen in the month of May for site 1 and site 3, but it was minimum in April for site 2. Per cent root infection was maximum in the month of September and December. It was cent per cent for site 2, 90 per cent and 95 per cent for site1, respectively and 95 per cent for site 3.

Key Words **:** AM Fungi, Occurrence, Seasonal variation, Potato

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Mycorrhizal fungi are normal root symbiotinhabitants which aid plants primarily in uptake of water and mineral nutrients. The degree of exchange between the cortical cells of the host root and fungal endophyte depends largely on the amount of exchange surface and on the inherent efficiency of the endophyte (Biermann and Linderman, 1980). Obligately mutualistic AM fungi have been studied extensively at a global scale, not only on account of their ability to help plant to withstand various kinds of abiotic and biotic stresses but also with their new found role in evolution, ecosystem dynamics and plant community establishment (Manoharachary *et al.*, 2005). The capacity of AM fungi to act as biofertilizers, bioregulators and bioprotectors has repeatedly been demonstrated by Mulongoy *et al.*, 1992; Lovato *et al.*,1994 and Linderman *et al.*, 1992. Thus, they play a key role in sustainable conservation of tropical gene pool and diversity (Herrera, 1970).

To understand the behavior and importance of AM fungi in a particular area, it is necessary to ascertain the quantity and the type of propagules in the soil and also the increase of root infection in the plants and the variation of both parameters with time (Lopez and Honrubia, 1992). The seasonal variation of the mycorrhizal inoculums is an important factor to be taken into account in the practical application of inoculums (Gemma and Koske, 1988). Hence, we choose to estimate the biodiversity and composition of AM fungi present in the soil of the worlds 3rd most important crop – Potato.

MATERIALS AND METHODS

Sample collection and field work:

Three sites were selected in and around Pune for study. Soil samples were collected from all three selected sites:

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